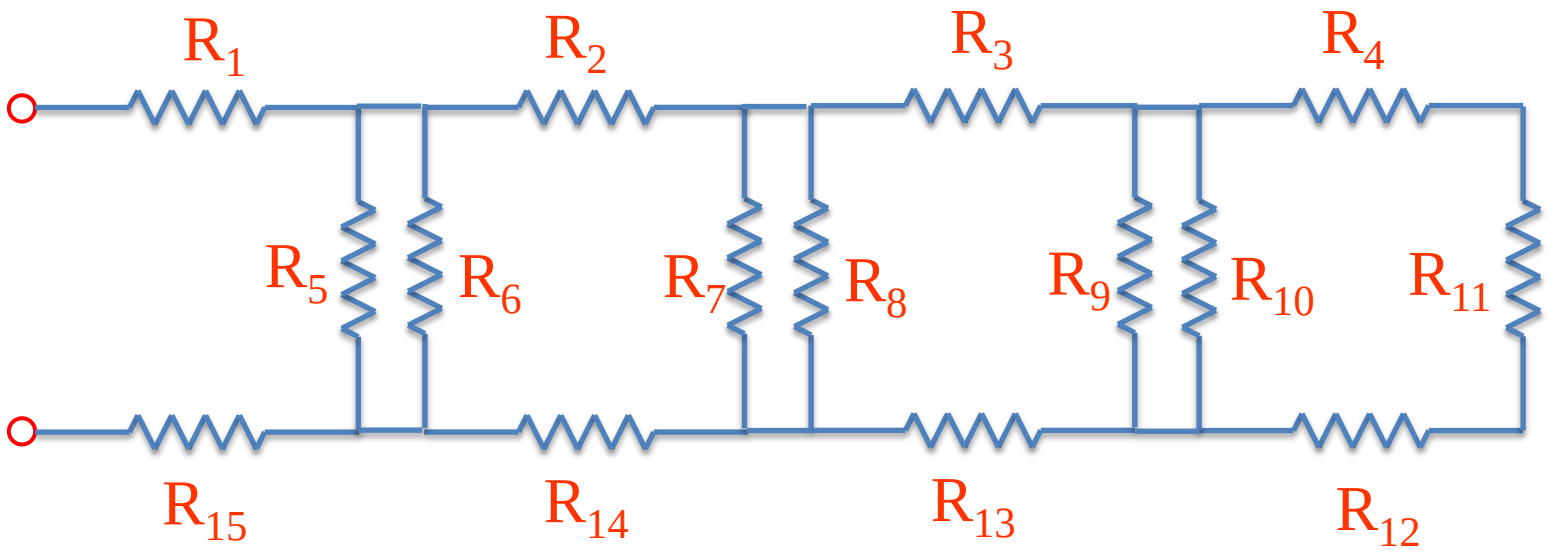
EECS 70A: Network Analysis

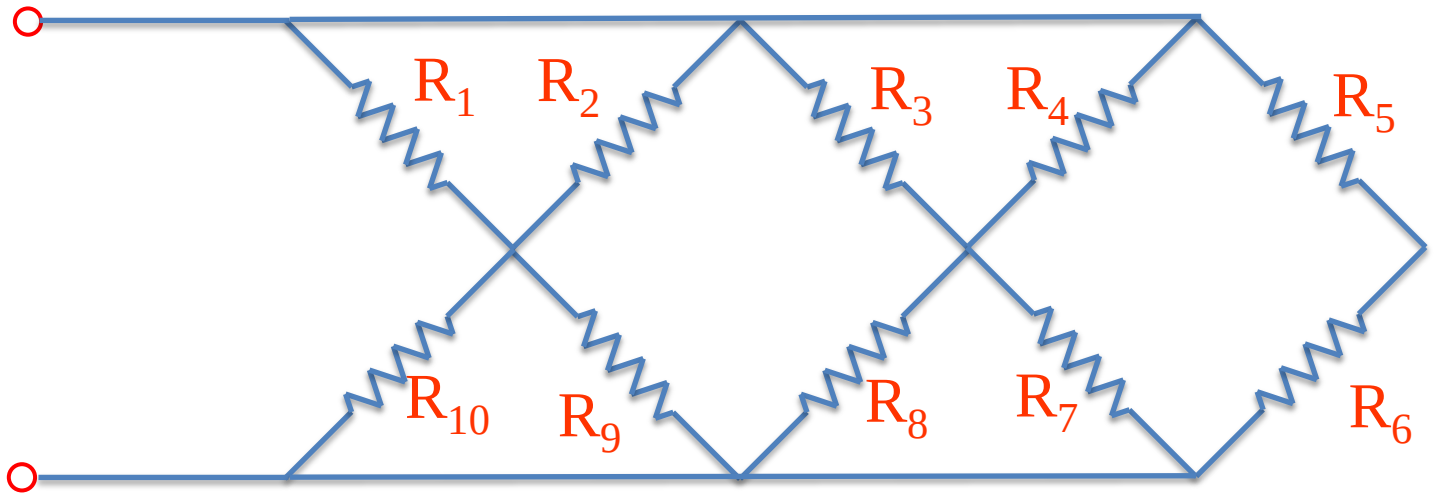
Homework #2

- The homework is due Thursday 4/17/2014 at 5:30pm.
- You can choose either way to turn in your homework.
  1) Turn it in during discussions (Highly recommended)
  2) Turn it in during office hour (Thursday 4:00 - 6:00pm @EH 3404)
  3) Slide it under TA's lab office door (Any time before deadline @EH5109)
- Note: lab location is different from office hour location.

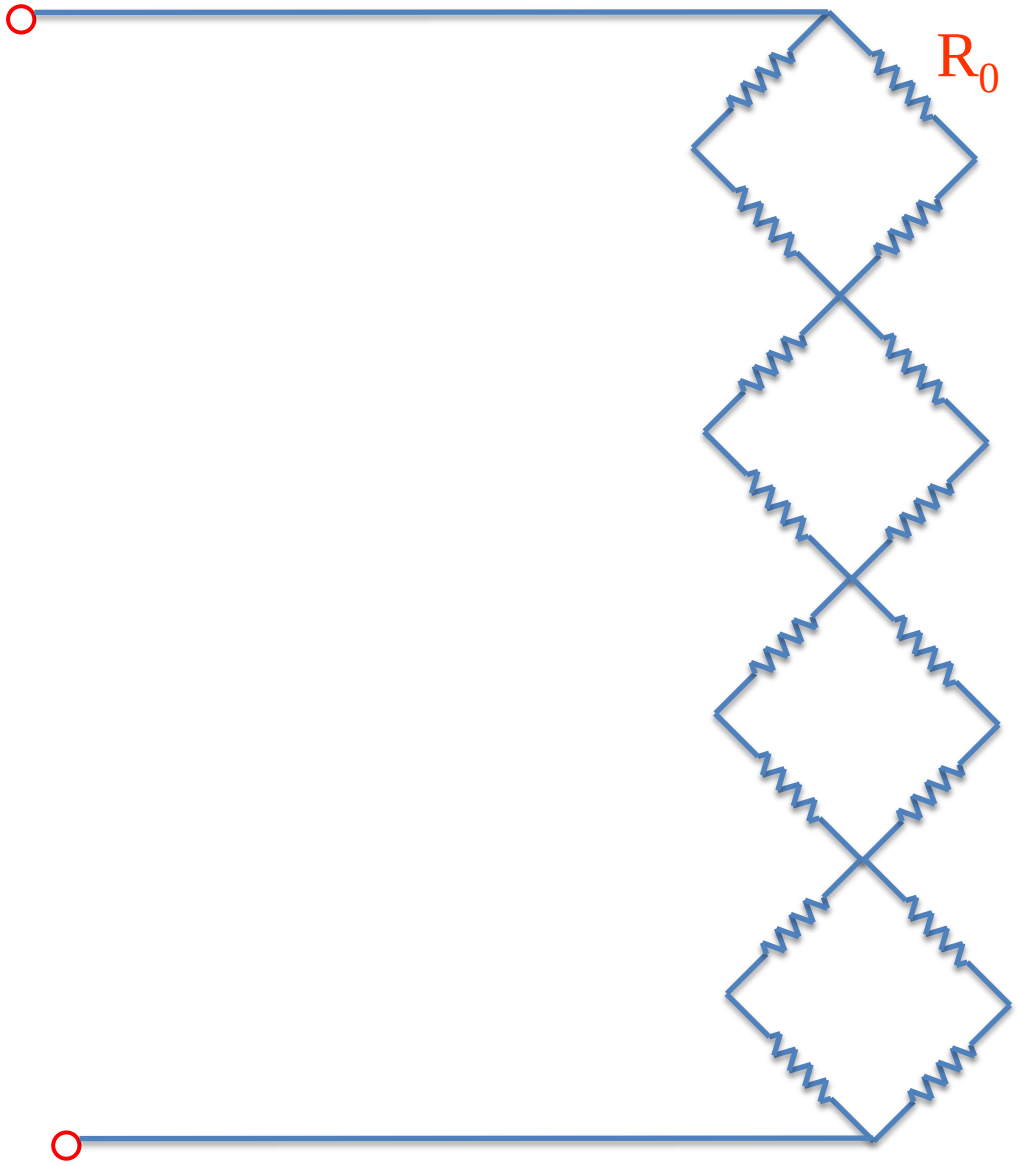
Problem 1: Solve for R_{eq}. You may use the parallel notation discussed in class.



Problem 2: Solve for R_{eq}. You may use the parallel notation discussed in class.

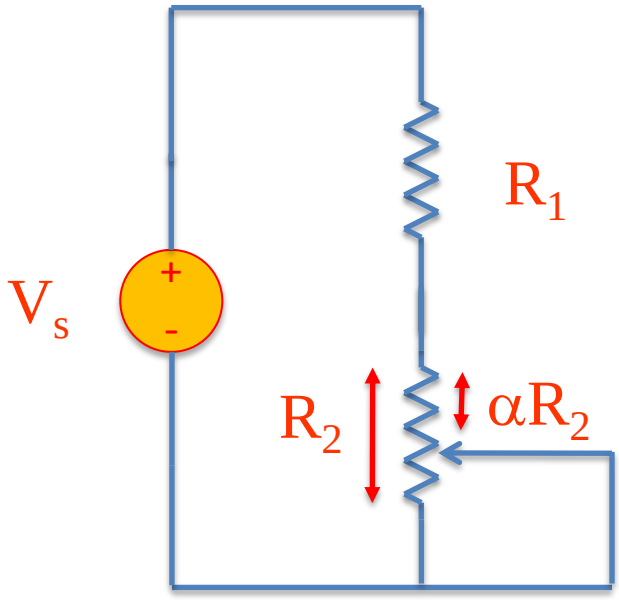


Problem 3: Solve for R_{eq}. All resistors have the same value R_0.



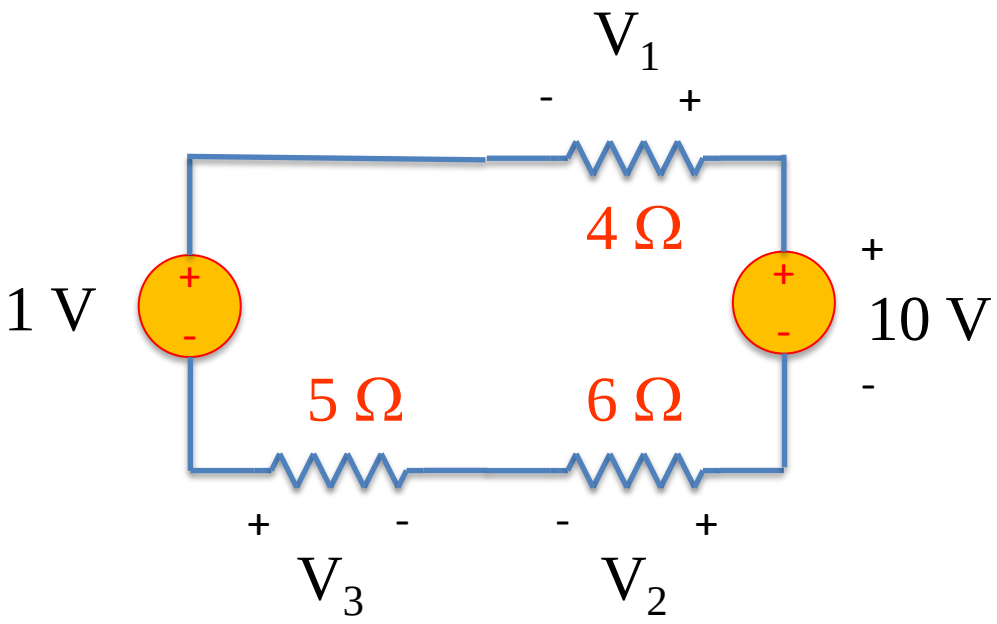
Problem 4: Potentiometer.

In the circuit below, the wiper divides the potentiometer resistance between αR_2 and $(1-\alpha)R_2$, where $0<\alpha<1$. Find the ratio of the power dissipated in R_1 to the power supplied by the voltage source (P1/Ps) as a function of α.



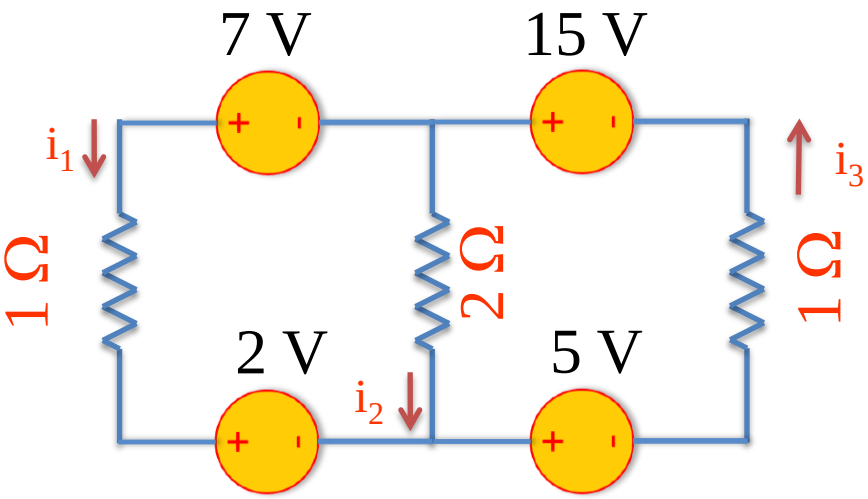
Problem 5: KVL & Ohm

Find V_1 through V_3 and the current flowing in the circuit below.



Problem 6: KVL, KCL & Ohm

Find i_1 through i_3 in the circuit below.



Problem 7: KVL, KCL & Ohm

Find V_1 through V_4 and i_1 through i_3 in the circuit below.